Video Analyser-2000

Code 250D

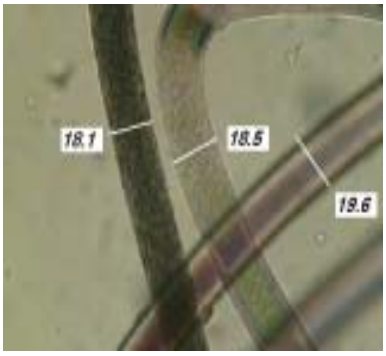
The most advanced computerised high definition system for the microscopic analysis of fibers, yarns and fabrics.

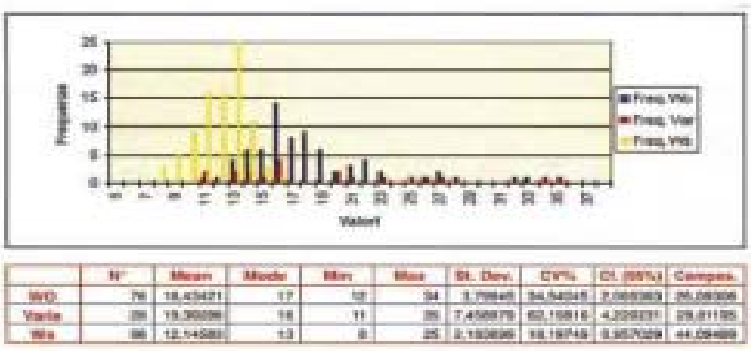
The system is composed by:

- Leica Biological Microscope.
- Leica Stereo-Microscope.
- Professional colour Video camera with 1/2'' CCD.
- Optical fibre illumination device (150W) with two 50 cm arms .
- «**Mesdan Video Analyser**» graphic card for images acquisition .
- Special «**Mesdan Video Analyser**» software.
- IBM Personal Computer.
- PHILIPS 17'' LCD Monitor (or equivalent).
- EPSON STYLUS COLOR high quality printer.
- Sample preparation kit for longitudinal and sectional analysis (microtome, slides and covers, immersion oil and other accessories)
- Fabric support kit for the analysis of irregularities in woven and knitted fabrics and for the measurement of the weft and warp density per cm.
- Equipment functioning instructions and sample preparation literature.
- Calibration slide (for the system calibration control).
- Microsoft Office software package for the statistics processing and report production.

EQUIPMENT SUITABLE TO:

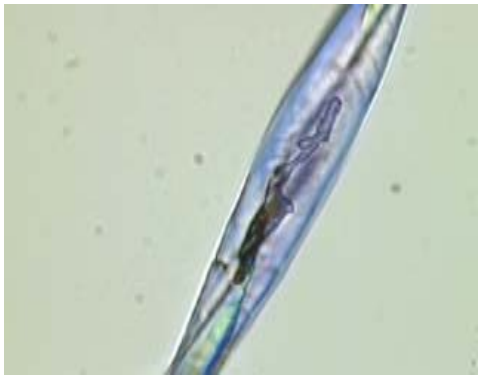
- **Perform in a fast and easy way the fineness analysis of single fibres**, by operating with the live image and by means of the mouse only.





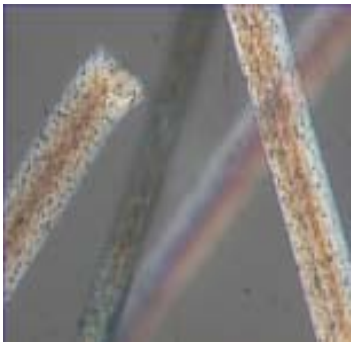
- **Identify the different fibres contained in a blend and analyse the composition percentage**, by operating with the live image, in accordance with the IWTO 8, IWSTM 24, ISO 137, ASTM D2130 international standards.

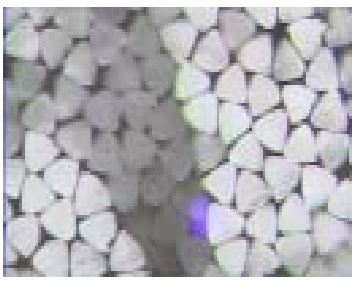
Longitudinal image of a cotton and a wool fibre, to highlight how different fibres can be easily detected.



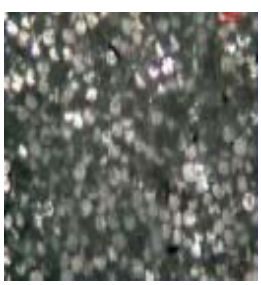
- **Check the purchased material** (searching for possible foreign fibres) and **identify the type of fibre,** comparing it with the fibre pictures stored in the DataBank, with both the longitudinal and the sectional views.

Viscose fibre in longitudinal and sectional view.

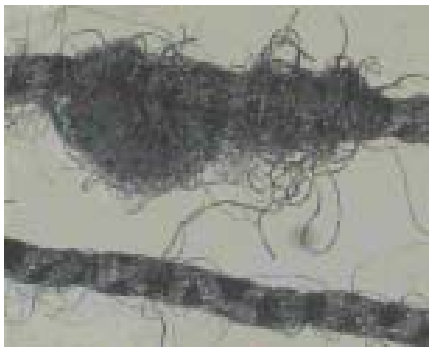




Longitudinal and sectional view of a glass fibre.

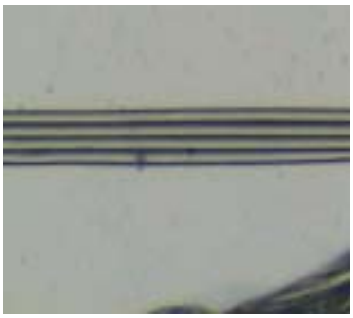


- **Analyse the yarn structure and detect possible defects**. Check the single threads of a twisted yarn; check the single yarn fibres.

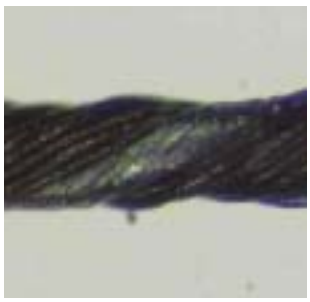


- Measure the count of **circular section yarns and filaments in Dtex or den .**

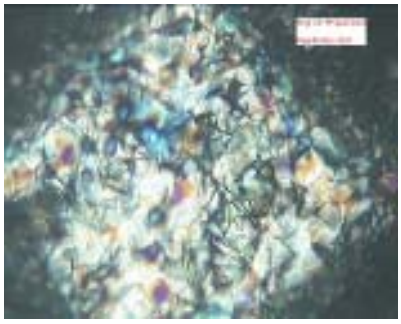
- **Check and measure the quality and shape of Lycra or synthetic multifilament single threads.**



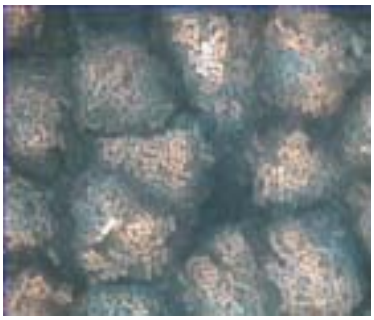
- **Detect, identify and measure possible impurities contained in textile materials** (neps, pollution due to foreign fibre content in a fabric, oil or grease content in a yarn).

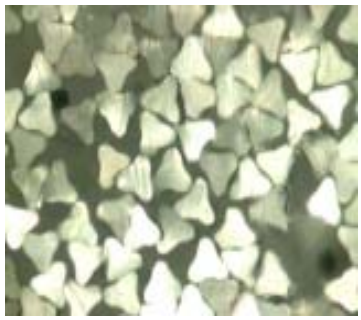
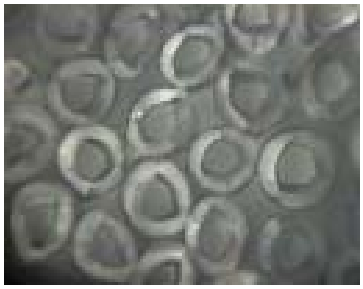


- **Analyse the compactness of non-woven fabrics.**

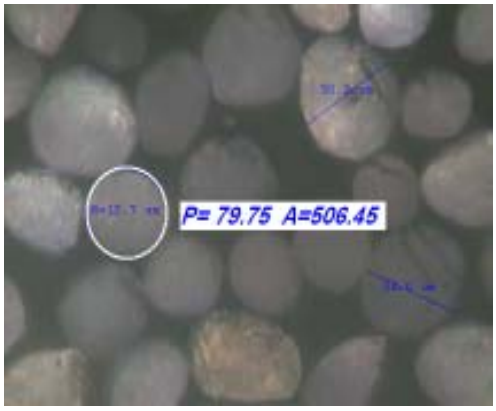


- Perform a **micro analysis of yarns and fibre sections**.



- Measure section surfaces and perimeters.



- **Analyse mechanical parts** (i.e. needle points, spinnerets, etc).

Example of spinnerets

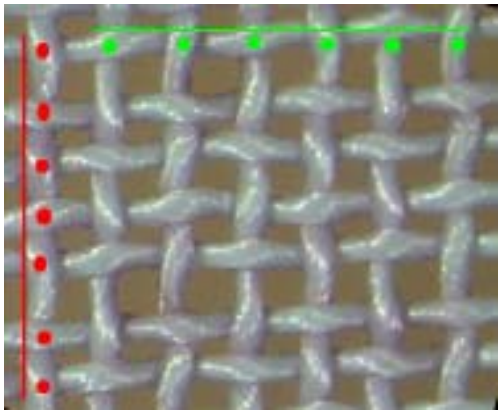
Example of a nozzle of a splicer mingling chamber.

Example of spinning rings

- Perform a **macro analysis of a yarn section**.

Example of an indigo dyed yarn section, extracted from a denim fabric

- Reduce the fabric warp and weft density to a cm or a inch.



The operator simply traces a reference line of desired length on the warp and weft and identifies the number of threads.
The «Mesdan Video Analyser» software automatically determines the number of threads per cm (and inch).

Material Materiale	*Test*	
	Weft/ Trama	**Warp/** Ordito
Measure number Numero di misure	10	10
Misura di riferimento microns	50,000	50,000
Yarns for cm/ Riduzione fili al cm	10,4	7,0
Yarns for inc/ Riduzione fili al pollice	26,4	17,8

The collected data are automatically exported onto an excel sheet that produces a report with the thread reduction each cm (and inch).

- Process, store and print the produced measurements and the minimum, medium and maximum values, CV% and distribution graphs.

I.e. count analysis of a circular section fibre, in tex and den: data are automatically processed; the report can be either printed or stored.

MESDAN VIDEO ANALYSER

DATA: 15/02/2005

Note: Use it ONLY if you are sure that the section of the fiber is circular.

Importante:Da utilizzare SOLO se si è certi che la sezione delle fibre sia circolare.

Test parameters/ Parametri di test

Material/ Materiale	Test	**Optics X/** Ingrandimenti X	630
Lot/Lotto	101010	**Total measures/**Misure totali	20
Customer/Cliente	Test	**Standard test/** Normativa	//
Examiner/Esaminatore	Davide	**Unit of measurement** Unità di misura	microns (µm)

Sample description/ Descrizione campione	
Observations/ Osservazioni	

Statistical results/ Risultati statistici

Material Materiale	POLIESTER	Nylon	0	0	0
Measure number Numero di misure	10	10	0	0	0
Mean/ Media	20,380	25,080			
Max	22,200	25,900			
Min	19,700	24,000			
CV[%]	3,604	2,074			
Dev. St	0,735	0,520			
Range [%]	12,267	7,576			
Specific weight Peso specifico **(g/cm³)**	1 1,38	2 1,14	3	4	5
Count (Dtex)	2,210	2,000			
Count (Denari)	1,989	1,800			

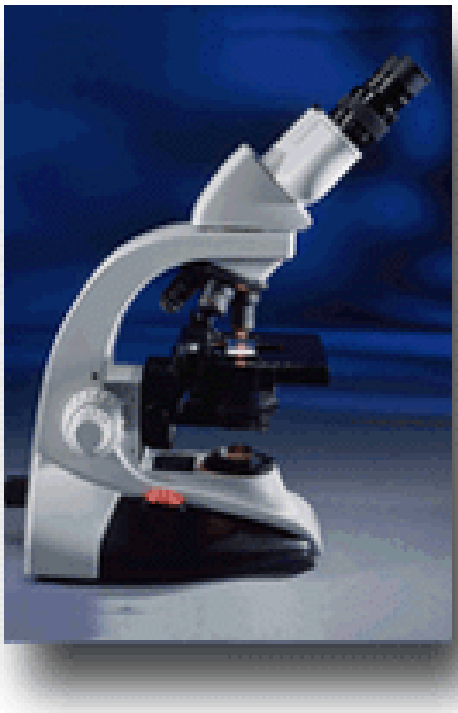
Single measures/ misure singole

N° measure N° misura	POLIESTER	Nylon	**0**	**0**	**0**
1	20,00	25,00			
2	21,00	25,30			
3	20,00	25,40			
4	22,20	25,00			
5	20,10	25,60			
6	19,90	24,80			
7	19,70	24,00			
8	20,30	25,90			
9	20,50	25,00			
10	20,10	24,80			

In accordance with the following International Standards: UNI 5423, AATCC 20, ASTM 276-00, ASTM 2130-90, IWS TM 24, ASTM 276-00A, IWTO 8-97, ASTM D629-99, UNI 1130, UNI EN 12751 ISO 137

SYSTEM COMPOSITION

LEICA biological Microscope with professional lenses, recommended for the longitudinal and sectional analysis of fibres and yarns.



- High quality and accuracy Microscope
- Phototube trinocular viewing body with Siedentopf design, to adjust the interpupillary distance without changing the focussing.
- Koehler illumination device for the phase contrast and micro photographs (20W).
- Objective image viewing.
- Polarising filter (for a better sample viewing), blue and green coloured filters.
- High precision focussing system.
- Slide movement device with micrometric regulation.
- On screen magnifications: from **128X to 2000X**.
- Highly accurate revolving lenses system.

LENSES IN USE	OCULAR MAGNIFICATION	ON SCREEN MAGNIFICATION	ON SCREEN FIELD OF VISION (mm)
4X	40X	128X	1.6
10X	100X	320X	0.65
20X	200X	640X	0.35
40X	400X	1280X	0.15
63X (optional)	630X	2016X	0.1

Note: by using the 0.50X additional lens between the microscope and the video-camera (available as optional) the on screen magnification rate decreases by 50% and the field of vision increases by 50%.

- The mentioned dimensions and final magnifications also depend on the hardware in use.
- The above mentioned magnifications and fields of vision have been calculated by using a 17" monitor with 1280X1024 resolution.

PROFESSIONAL VIDEO-CAMERA with 1/2'' CCD; compared to the 1/3'' CCD, it has a much wider field of vision – hence a wider surface of the sample is visualised – and a quicker reaction to light variations. Complete with achromatic C step connector with 1:1 lens, for the insertion on the microscope, to give the maximum contrast, colour and planarity quality.

SYSTEM COMPOSITION

LEICA Stereo-Microscope for the analysis of fabrics, yarns and mechanical parts like traveller, needles and spinnerets.

- High quality and precision Microscope
- Illuminated base. Adjustable light intensity and direction, particularly suitable for the analysis of fabrics
- High precision focussing device
- Video-camera connector (oculars supplied as optional)
- 5 fixed focus lenses

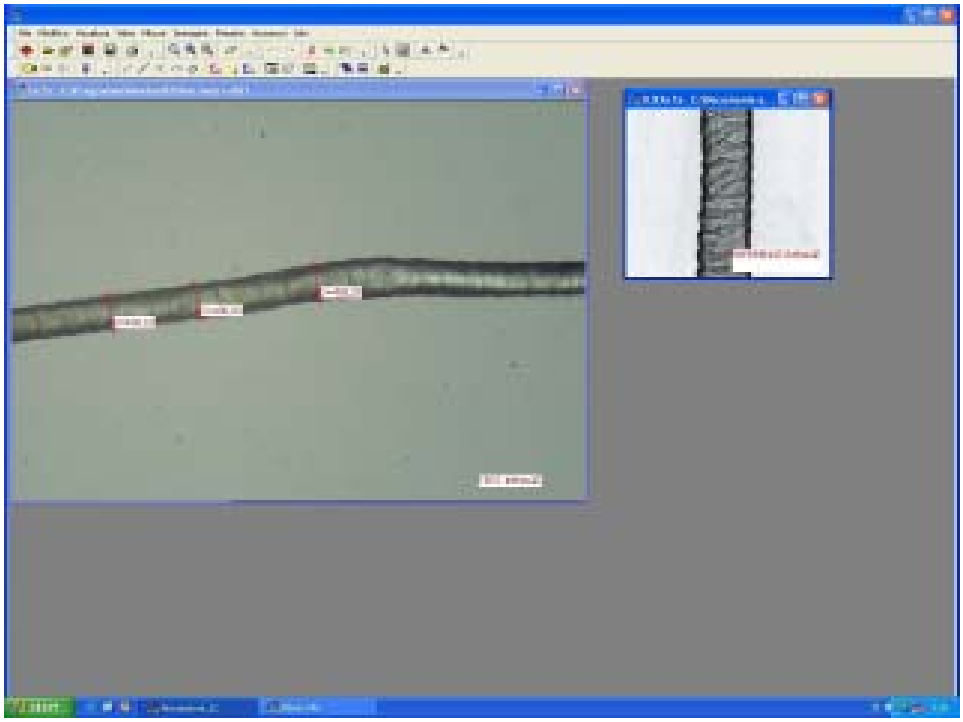
LENS IN USE	ON SCREEN MAGNIFICATION	ON SCREEN FIELD OF VISION (mm)
0.63X	20X	11.6
1X	32X	6.8
1.6X	51X	4.1
2.5X	80X	1.9
4X	128X	1.6

Note: by using the 0.50X additional lens between the microscope and the video-camera (available as optional) the on screen magnification rate decreases by 50% and the field of vision increases by 50%.

- The mentioned dimensions and final magnifications also depend on the hardware in use.
- The above mentioned magnifications and fields of vision have been calculated by using a 17" monitor with 1280X1024 resolution.

150W OPTICAL FIBRE ILLUMINATION DEVICE (cold light) with two 50 cm semi-rigid fibre optic goosenecks. Necessary for a perfect illumination of a sample from different adjustable angles.

MESDAN VIDEO ANALYSER SOFTWARE



High flexibility to perform measurements on stored images as well as on live images (in accordance with International Standards).

Measurements of **lengths, surfaces, perimeters, angles, distances between two points or lines or objects.**

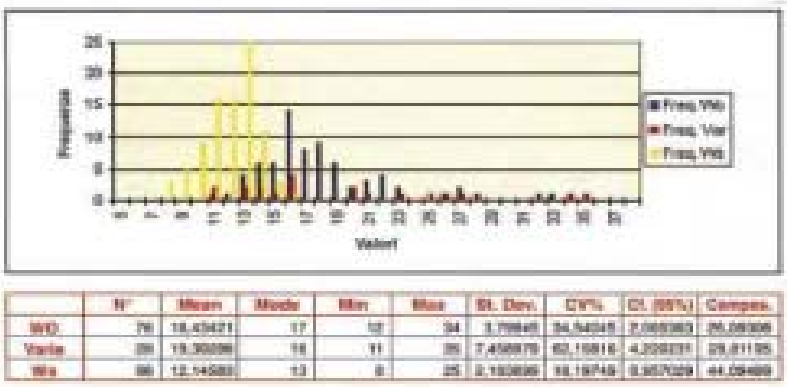
The software allows to save a picture (complete with measurements and comments) into the Data Bank and to compare the live picture with a stored one (or more simultaneously).

It is possible to attach to the image an informative chart, containing the material composition, the type of lens in use and other information; this chart can be opened with a simple mouse click and can be printed together with the picture.

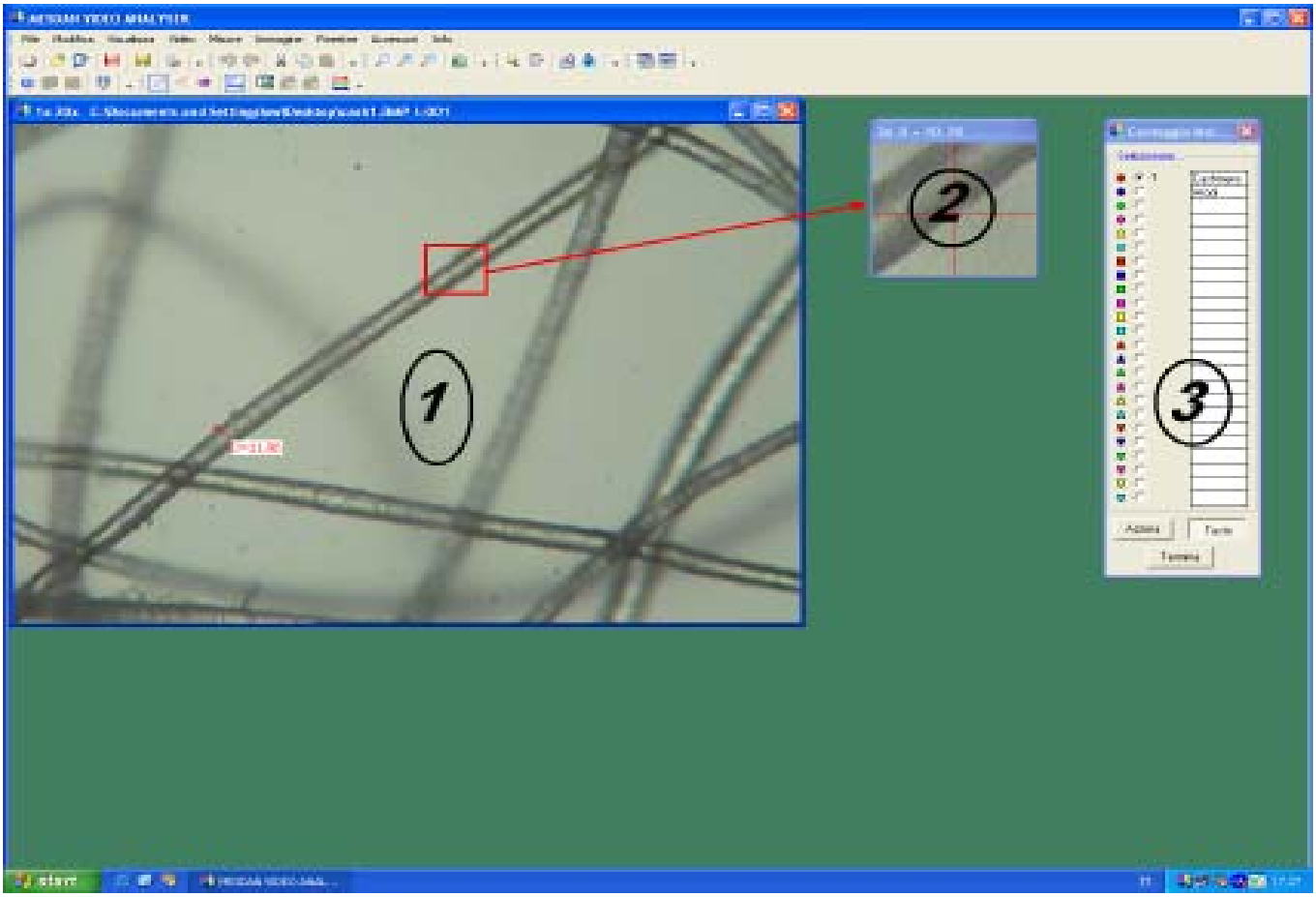
All the measurements can be exported into an Excel template for the data processing (and to produce statistics and comparative graphs). **The operator can also create self-made Excel templates, according to his requirements.**

Languages in use: Italian, English, Spanish, Portuguese and Polish.

The software is provided with a ready-to-use Excel template to perform on 5 different materials: fibre % content in a blended yarn; perimeter and surface calculation; count measurements on perfectly circular section yarns; fabric warp and weft density reduction to cm or inch; general counting on lengths. The obtained data allow to produce reports with statistics (CV%, mean values, percentages, etc) and comparative graphs, that can be either printed or stored.



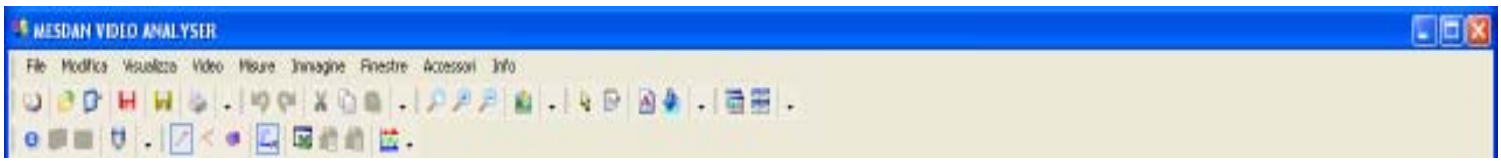
Fineness analysis of a blend with 3 components



1) Window to display the live picture: it is possible to store and/or print a picture complete with comments and measurements. It is then possible to perform measurements and send them to an Excel template in order to obtain statistics.

2) View finder window on the area where measurements are being taken, in order to guarantee the maximum measure accuracy.

3) Material chart: the name of the material to be tested is inserted here (the measurements on the picture will be expressed in different colours); if necessary, the measurements of every material will be inserted automatically in different Excel columns.



The simple and intuitive application bar makes the software easier to use also for less expert operators.

The software includes a Data Bank with reference pictures that can be personalised according to the user's needs.

In order to help the operator and guarantee the maximum accuracy, different special features are available: i.e. light and colour adjusting can be made digitally through the software (as well as mechanically, by operating on the microscope filters).

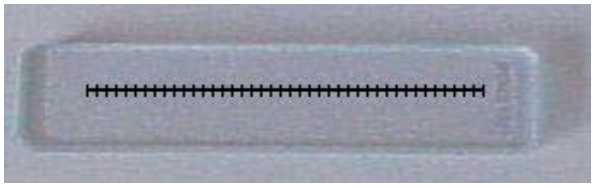
Personal Computer

IBM PC complete with «Mesdan Video Analyser» acquisition card, Philips LCD 17'' monitor and photographic quality Epson printer. A set of ink cartridges and high definition photographic paper is supplied as spare.

Sample preparation and analysis kit

1) Complete set for sample preparation: scissors, tweezers, and other accessories; blades, needles, yarn, slides and slide holders.
2) Immersion oil.
3) Fabric analysis support.
4) Fibre section analysis plate.

Calibration slide



Necessary for the system routines calibration.

Optional accessories (to be ordered separately)

63X LENS (for the Biological Microscope) as replacement of one of the 4 lenses supplied as standard with the microscope, it enables a 2000X on screen magnification. Code 250 336

C-STEP CONNECTOR WITH 0.5X LENS (for the Biological Microscope) The installation of this connector allows to halve the magnification on screen and double the sample field of vision. Code 250 338

TRINOCULAR KIT (for the Stereo-Microscopio) to display the sample image either on the PC monitor or in the oculars.

Code 250 340

C-STEP CONNECTOR WITH 0.5X LENS (for the Stereo-Microscopio) The installation of this connector allows to halve the magnification on screen and double the sample field of vision. Code 250 334

Additional consumables

- Set of 50 slides ** code 191 50 **
- Set of 100 slide covers ** code 191 52 **
- Immersion oil bottle ** code 191 54 **
- Pack of paper for printer ** code 250 18 **
- Set of cartridges for printer ** code 250 322 **

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